Municipal Solid-State STREET LIGHTING CONSORTIUM
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THE LIGHT POST

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To have your LED project featured in THE LIGHTPOST contact us at:
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- Edward Smalley, Seattle City Light
- Ghanshyam Patel, New York City Street Lighting Division
- Tod Rosinbum, Portland Ore, Traffic Signal & Street Lighting
- Michael Stevens, Georgia Power
- Ed Ebrahimian, Los Angeles Bureau of Street Lighting
- Dr. Ronald Gibbons, Center for Infrastructure Based Safety Systems, Virginia Tech
- Rick Kauffman, IES Roadway Committee

Communications Committee

- Dave Smolinski, Chair, Georgia Power

Top of The Light Post-Director's Update

It is clear that street lighting in the U.S. is moving towards an era of heavy capital investment. The current investment era differs from what took place 30 years ago in that lighting will reflect a paradigm shift where capital investment cycles of twelve-plus years replace the two to five year O&M cycles we are now burdened with. Some see this as indicator of the road ahead.

During July I traveled to Pittsburgh for the U.S. Department of Energy's (DOE) Solid-State Lighting Market Introduction Workshop on July 18-19, along with over 300 other attendees. The intent of the workshop was to address the technology lag (spoken about in a previous edition of this newsletter) inherent with the rapidly changing nature of LED street lighting products. LED street lighting technology is advancing so rapidly, that conclusions drawn from fixtures analyzed a year ago are likely to be out of date today. Many still question product reliability, lifetime, dimming, color quality and other characteristics of performance. The workshop sought to answer these questions.

I participated in a panel titled "Product Pricing, Cost Effectiveness, and Financing." It was moderated by the DOE's Jim Brodrick. Specifically, the panel discussed the significance of the high cost of LED lighting as a barrier to wide-spread market adoption. The panel explored and discussed the latest market trends, retail product pricing, cost effectiveness of outdoor LED products and innovative financing solutions.

Another panel explored the reliability and lifetime of LED products. Questions in this regard are understandable, as LED products have not been used long enough to evaluate their stamina. This panel specifically discussed issues surrounding the lifetime of LED luminaires, how LED systems work and what certain entities are doing to develop standards to more accurately describe LED lifetime. To view an agenda and all workshop materials, click **here**.

Workshops like this and workshops conducted by the Consortium are great resources available to end users and prospective end users to learn as much as they can about LED technology to make calculated, informed decisions.
Finally, the Consortium and the City of Boston held a successful LED Street Lighting Workshop Aug. 2-3. You can read more about it below. Incidentally, I was honored that the *Boston Globe* featured an op-ed that I authored on their website. It was written to coincide with our Boston Workshop. You can read it by clicking **here**.

With interest in Consortium events and activities growing, LED manufacturing job growth and more LED installations every day, the future of LED street lighting looks bright!

Kind Regards.

Edward Smalley
Director, Municipal Solid-State Street Lighting Consortium

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Contact Us

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www.ssl.energy.gov/consortium.html

Click here for Tools & Resources

Consortium Staff

- Michael Jerrett, Communications

Featured Case Study: Georgia Power

This month's case study comes to us from the Consortium's Communications Committee chair, Dave Smolinski of Georgia Power. The case study describes the conversion to LED outdoor area lighting undertaken by a Lexus dealership in South Atlanta.

Following a change of ownership and management at the dealership, a decision was made to implement a "green" initiative at the facility. Being "green" included changing the existing outdoor lighting to a more environmentally friendly and cost-effective lighting system.

The existing high-intensity discharge (HID) outdoor lighting system at the dealership consisted of 138, one-thousand-watt metal halide galleria fixtures mounted on 54 poles. The poles were a mix of mounting heights – 30 feet, 35 feet and 39 feet, and light placement was a mix of single fixture, two fixtures and four fixtures per pole.

Dealership management began meeting with Georgia Power's Lighting Services group in the summer of 2011 to develop a plan to replace the existing metal halide outdoor lighting with light-emitting diode (LED) lighting. A new lighting layout and photometric analysis were developed to optimize the outdoor lighting levels for the facility and to use the existing poles and pole locations. An LED lighting plan was approved and new LED fixtures were ordered. Removal of the HID lighting and installation of the LED lighting fixtures was completed in December 2011.

The new LED lighting installation utilized a total of 82 area lights on 55 poles. The LED fixtures have a correlated color temperature (CCT) of 4000K and a color rendering index (CRI) of 70. One new pole location was added to illuminate an area of the property that had not been illuminated with the old system. The other 54 pole locations were retained from the old lighting system and approximately half of the existing concrete poles were replaced with shorter fiberglass poles. LED fixture mounting is mainly one or two fixtures per pole plus three poles with four fixtures per pole.

Before: 1000W metal halide; 9.8 average fc

After: 202W LED; 7.9 average fc

Before: 1000W metal halide; 22.9 average fc

After: 270W LED; 4.0 average fc

Before: 1000W metal halide; 22.9 average fc

After: 202W LED; 4.0 average fc

Results/Benefits – **87% Energy Reduction!**

- Old MH System:
  138 1000-watt metal halide fixtures = 138,000 watts
- New LED system:
  67 202-watt fixtures = 13,534 watts
  15 270-watt fixtures = 4,050 watts
  Total = 17,584 watts

When the project was complete, the dealership realized a substantial decrease in the outdoor lighting energy use and a decrease in light pollution, as the light is directed toward the area to be illuminated—thus minimizing or completely eliminating light trespass. The new installation has greatly improved lighting uniformity by eliminating dark spots and hot spots. Furthermore, the display of vehicles and representation of colors have been enhanced. Additionally, it is well known that the longer life of LED fixtures reduce maintenance costs, are environmentally friendly and require no warm up time when powered up. By implementing this LED installation the dealership supports the National Automobile Dealer Association's (NADA) Energy Stewardship program.

Consortium Workshop in Boston!

Were you among the more than 100 attendees at the Consortium's Boston Workshop? Attendees came from as far away as Maui and Munich! The workshop was held Aug. 2-3 in the historic John W. McCormack U.S. Post Office and Courthouse, home of the Boston EPA headquarters.

The program was kicked-off with welcoming remarks from Jim Hunt, City of Boston Chief of Environmental & Energy Services. We were much honored to have Dr. James Brodrick introduce the program and explain why end-user education is an essential part of successful market adoption. The workshop featured a strong agenda that included a case study on the City of Boston's LED streetlight conversion program. The city began piloting LEDs in 2009 and has converted nearly 23,000 units to date. After considering energy and maintenance savings as well as energy conservation grants from their power provider, NSTAR, the project is seeing a 1.5 year payback!

A key session was a presentation by Chad Stalker of Philips Lumileds on Light Loss Factors. Mr. Stalker highlighted the Consortium recommendation for establishing Lamp Lumen Depreciation (LLD). This is essential to selecting the fixture most suitable to specific applications. Helen Aki with the Metropolitan Area Planning Council and NAESCO's Donald Gilligan presented on Group Procurement and financing options. This is a key topic, because as we know the perceived issue of cost can be one of the most significant barriers to LED street lighting implementation.

As with other workshops, the night time bus tour of Boston's LED streetlight installations was a huge highlight for many attendees. Boston Commissioner of Publics Works Joanne Massaro and Associate Electrical Engineer Glenn Cooper guided this tour of more than 50 participants through the streets of Boston where

they were not only able to personally experience the impact of a full scale conversion, but many residents came out from their homes and shared their many positive experiences.

A great way for cities and towns to evaluate LED products and gather public feedback is to implement LED pilot projects and demonstrations. PNNL's Michael Myer discussed this element that has been employed in many locales, including the Consortium's home base of Seattle. One of the key conclusions drawn from this discussion is that there is a significant learning curve inherent in the implementation of LED street lighting and that we can all learn from one another's experiences.

All program presentations are now posted on our website. To view them, click **here**.

LED Manufacturing Jobs: An Indicator of the Road Ahead?

While the Consortium does not endorse any particular manufacturer of LED lighting products, we feel it is important to briefly illustrate how the solid-state lighting industry is impacting jobs here in the US.

Consortium Director Edward Smalley visited the Cree LED manufacturing plant in Racine, WI and learned quite a bit about their manufacturing process. Of particular note was that the company is in the midst of hiring more than 450 new employees!

You may recall reading about Acuity Brands in a recent SSL Posting. If not, you can read the posting **here**. This is an LED lighting manufacturer based in Atlanta with plants in various U.S. locations employing nearly 5,000 people combined. As the U.S. accelerates LED street lighting implementation, we can strongly theorize that these jobs will continue to increase, filling a much needed void in manufacturing sector jobs which has significantly decreased over the years.

LED's in the News

With so much happening in the world of LED street lighting, we thought it would be useful to share a few stories from around the country from time to time in *THE LIGHT POST.* If there is an LED street lighting story you feel needs more attention, please feel free to submit it to us at MSSLC@seattle.gov.

Here are the entries for this month's LED's in the News:

- Our friends at Newstreetlights.com wrote about how the City of Jenks, Oklahoma is embarking on an LED street lighting project featuring both street and parking lot lighting which includes 89 decorative LED streetlight fixtures. You can read about it **here**.
- **Here** is a story about the City of Boston's LED street lighting program and the inherent challenges of public opinion that accompany many initial installations and the even greater benefits.
- The small town of Blaine, Washington which sits on the Canadian border is gearing up to install 26 LED streetlights through a $520,000 federal grant. Read more about it **here**.
- The City of Woburn, Massachusetts is gearing up to install 1,130 LED street lights to be funded by a $230,000 state grant and $300,000 appropriated by the city council. Read more **here**.
- The Big island of Hawai'i has ordered 1,000 LED street lights. **Here** is the story.

Take THE LIGHT POST Survey

Here at the Consortium, we are proud of our monthly e-newsletter, *THE LIGHT POST.* However, we also understand that there is always room for improvement. Please take a moment to let us know how we can address your needs better by answering the three questions below.

1. Do you read the Newsletter?
2. Do you find it useful/informative?
3. Would you be willing to share your LED experience with other readers? If so, supply contact information.

Email your responses to MSSLC@seattle.gov with subject: THE LIGHT POST – MY THOUGHTS

Join us in Miami September 9-12 for the IES Street and Area Lighting Conference (SALC)

The IES SALC is coming up September 9-12 at the Intercontinental Hotel in Miami. Click **here** for registration and program information.